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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,431	10/16/2001	Michael T. Andreas	MTI-31555	5688

31870 7590 10/13/2006

WHYTE HIRSCHBOECK DUDEK S.C.
555 EAST WELLS STREET
SUITE 1900
MILWAUKEE, WI 53202

EXAMINER

KORNAKOV, MICHAIL

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,431

Applicant(s)

ANDREAS, MICHAEL T.

Examiner

Michael Komakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-25, 27-48, 50-60, 62-71, 74, 75, 77-79 and 139-156 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/10/2006 has been entered.
2. Claims 15, 49, 61 and 73 are cancelled.
3. Claims 1, 18, 27, 28, 31, 42, 51, 52, 54, 55, 60, 62, 139-143, 146-148 are amended to introduce the new limitations of pH of a claimed composition.
4. New claims 149-156 are added.
5. Claims 152-156 are withdrawn from consideration as being drawn to the species of organic solvent **non-elected by Applicant** in previous communications.
6. Claims readable on the elected species and examined on the merits are the following: 1-7, 9,10,16-20, 22-24, 27-28,30-35, 37,42-46, 50-60, 62-66,70-71,77,139-144,146-151.
7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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8. Claim 76, 77 and 144, 145 stand objected to because they do not in any way limit the claimed composition, but simply add the limitations to its intended use as to what kind of particles are removed by a composition.

9. Claims 1-7, 9, 10, 18-20, 22-24, 27,28, 30-35, 37, 42-46, 50, 55-60, 62-66, 70, 71, 77, 139- 144, 146 and 148 stand rejected and new claims 149-151 are rejected under 35 U.S.C. 103(a) as being unpatented Pregozen (U.S. 5,141,803), as per reasons of record.

Pregozen discloses an aqueous composition containing (a) 0.02-0.25 wt.% of potassium sorbate; (b) 0.05-0.20 wt.% of citric acid; (c) 0.02-0.20 wt.% of disodium salt of EDTA (chelating agent) ; (d) 0.03-0.24 wt.% of cationic biocide; and (e) water to 100 wt.%. Composition has pH 3.5-4.5. Major amount of water employed in the composition is deionized water. Relative amounts of ingredients of composition are within the claimed range (abstract, col.2, line 65 through 3, line 9). ***Composition in Table in col. 6 recites potassium sorbate *antimicrobial agent of the instant claims), citric acid (cleaning agent of the instant claims) and deionized water (solvent) in the amounts as instantly claimed.*** EDTA chelating agent is disclosed in the abstract.

The difference between Pregozen and the instant claims that Pregozen uses 0.03% wt of biocide, while Applicants' transitional phrase "consisting essentially of" exclude the components that materially change the composition. However, by the virtue of definition "biocide" is **chemical that kills microorganisms**: a chemical designed to kill organisms, especially microorganisms, i.e. antimicrobial agent. Therefore, the addition of biocide in Pregozen will only enhance the antimicrobial action of potassium

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sorbate as an antimicrobial agent, and therefore, such combination would have been obvious to those skilled in the art, since it is prima facie obvious to combine two compounds each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See also *In re Crockett*, 279 F.2d 274, 126 USPQ 186 (CCPA 1960). With regard to the functionally claimed limitations that the amounts of ingredients are added in order to formulate an effective cleaning composition for removal of residual particles, it is noted that since the components of Pregozen's composition are the same and are added in the same relative amounts as claimed, and having the same pH as claimed the composition of Pregozen is fully capable of removing the particles as claimed.

The other difference between Pregozen and the instant claims as presently amended and argued by Applicants is pH 5 in the instant claims versus 4.5 in the teaching of Pregozen.

There are several aspects to be addressed here:

- a) lack of showing criticality of pH 5 as instantly amended versus previously claimed pH 4 in Applicants' specification;
- b) substantial identity of Applicants' composition both by chemical components of the composition and by the relative amounts of the components in the composition.

As such, the composition of Pregozen may inherently exhibit the pH as claimed, in the sense of *In re Fitzgerald* or *In re Spada*, or the pH of the composition of Pregozen can be routinely optimized to the desired pH by changing the amounts of the

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components, and is therefore, within the skill of those skilled in the art. Applicants arguments in this regard will be addressed below.

10. Claims 16., 17, 51-54 and 147 are rejected under 35 U.S.C. 103(a) as being unpatentable Pregozen, in view of Small (U.S. 6,156,661)

With regard to claims 16, 17 and 147 Pregozen disclose the composition as instantly claimed, utilizing sorbic acid and its salts as antimicrobial agents and citric acid and its salts as cleaning agents. The reference to Pregozen does not specifically recite the buffering agents, such as ammonium hydroxide.

Small discloses composition for removal of chemical residues from metal or dielectric surfaces or for removal of residues after chemical mechanical polishing of a copper surface, which is an aqueous solution with a pH between about 3.5 and about 7. The composition contains a nonfunctional, difunctional or trifunctional organic acid and a buffering amount of a quaternary amine, ammonium hydroxide (abstract). One of the preferred compositions contains citric acid, ammonium hydroxide and deionized water (Table VII in col. 11)

Since Pregozen is concerned with maintaining the pH of a composition in a specific range, and Small uses the ammonium hydroxide in a post CMP cleaning solution a person skilled in the art would have found it obvious to utilize the buffering agent of Small in compositions in order to buffer the solution and thus to arrive at the instant claims 16,17 and 147.

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It is also noted that, since the cleaning gent of Small is identical to Pregozen, and since Small also utilizes formic acid in his cleaning composition claims 1 and 11), which is an antimicrobial agent, a person skilled in the art would have found it obvious to utilize both citric acid (cleaning agent) and formic acid or sorbic acid (antimicrobial agent), as taught by Pregozen in combination of ammonium hydroxide of Small to maintain the desired pH and thus to arrive at the instant claims.

11. With regard to claims 51-54 Pregozen does not expressly disclose the use of another antimicrobial agent, such as benzoate, however, Pregozen does use two antimicrobial gents, one is sorbate and the other is a biocide. Small utilizes benzoic acid in the amounts as claimed in lieu or in combination with citric acid in his composition for cleaning semiconductor wafers (see Table II and claim 1) . It is within the skill of those skilled in the art to expect a combination of two known to work in an additive or cumulative manner. The combination of two compositions, each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition that is to be used for the same purpose is prima facie obvious *In re Kerkhoven*, 626 F 2d. 846, 850, 205 USPQ 1-69, 1072 (CCPA 1980).

Response to Arguments

12. Applicant's arguments filed 08/10/2006 have been fully considered but they are not persuasive.

Applicant's argument resides in contention that Pregozen does not teach that the composition has pH in the range of 5-6.5, while Applicants acknowledge that the composition of Pregozen discloses pH of 3.5 –4.5.

However, Applicant's composition, as claimed in independent claims is substantially identical to the composition of Pregozen (with the exception of 0.03 % of biocide that does not affect the pH) , therefore, **EITHER** the composition as claimed in the instant independent claims would not enable the higher pH, **OR** the composition of Pregozen is fully capable of exhibiting the pH as claimed or at least can be routinely optimized to reach the claimed pH.

With regard to Applicant's argument that citric acid is employed as a pH adjuster and allegedly therefore, the pH cannot be higher than 4.5 is not persuasive, since it is very well known in the art that citric acid is notoriously used for adjusting pH, and that the pH can be adjusted by citric acid, depending on what was the initial pH. Since the initial composition had a potassium sorbate as a major ingredient, it in fact had an alkaline pH, and therefore, the use of citric acid is just bring the pH to desired values, and as stated above can be adjusted to pH of 5 and above. It is worth to note here that the ***pH of citric acid itself is within the range of 4-6 .***

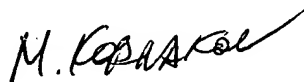
With regard to rejection of claims over Pregozen in view of Small, Applicant's argument is based on alleged unsuitability of Pregozen's reference, which is fully addressed above.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1404. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael Kornakov
Primary Examiner
Art Unit 1746

September 30, 2006

Continuation of Disposition of Claims: Claims withdrawn from consideration are 8,11-14,21,25,29,36,38-41,47,48,67-69,74,75,78,79,145 and 152-156.

Continuation of Disposition of Claims: Claims rejected are 1-7,9,10,16-20,22-24,27,28,30-35,37,41-46,50-60,62-66,70,71,77,139-144 and 146-151.